WHAT IS CLAIMED IS:

1. A method of optically producing a clock from an optical signal having a plurality of intensity peaks at different frequencies on a spectrum of the optical signal, comprising the steps of:

extracting a plurality of clock components by filtering out frequency bands between neighboring intensity peaks; and

producing a clock having reduced noise and jitter by logically ANDing two or more of the plurality of clock components extracted at the step of extracting the plurality of clock components.

2. The method of optically producing a clock as set forth in claim 1, wherein the logical ANDing performed at the step of extracting the clock is implemented through the use of an optical loop mirror.

3. The method of optically producing a clock as set forth in claim 1, wherein the logical ANDing performed at the step of extracting the clock is implemented through the use of a symmetric Mach-Zehnder.

4. The method of optically producing a clock as set forth in claim 1, wherein the logical ANDing performed at the step

of extracting the clock is implemented through the use of a colliding Mach-Zehnder.

5. The method of optically producing a clock as set forth in claim 1, further comprising the steps of amplifying a plurality of the clock components.

6. An apparatus of optically producing a clock from optical signal having three intensity peaks at different frequencies, comprising:

a first circulator having a first terminal, a second terminal and a third terminal, the first terminal receiving the optical signal, the second terminal sending the optical signal received by the first signal, and the third terminal sending a signal received by the second terminal;

a first filter receiving the optical signal sent by the second terminal of the first circulator, extracting a first clock component which has frequency band between neighboring intensity peaks among the three intensity peaks, sending the first clock component to the second terminal of the first circulator, and outputting the remaining signal with the first clock component being extracted;

a second circulator a first circulator having a first terminal, a second terminal and a third terminal, the first terminal receiving the remaining signal with the first clock

component being extracted, a second terminal sending the remaining signal received by the first terminal, and the third terminal sending a signal received by the second terminal;

a second filter receiving the remaining signal sent by the second terminal of the second circulator, extracting a second clock component which has frequency band between the other neighboring intensity peaks among the three intensity peaks, and sending the second clock component to the second terminal of the second circulator; and

a logical AND unit producing a clock by logically ANDing the first clock component sent by the third terminal of the first circulator and the second clock component sent by the third terminal of the second circulator.

7. The apparatus of optically producing a clock as set forth in claim 6, further comprising a photodiode to which the clock produced by the logic AND unit is transmitted.

8. The apparatus of optically producing a clock as set forth in claim 6, wherein the logical AND unit is an optical loop mirror.

9. The apparatus of optically producing a clock as set forth in claim 6, wherein the logical AND unit is a symmetric Mach-Zehnder.

10. The apparatus of optically producing a clock as set forth in claim 1, wherein the logical AND unit is a colliding Mach-Zehnder.